22. (Amended) A method of transmitting both periodic and aperiodic data in a network system comprising a network databus with a plurality of Network Interface Controller (NIC) modules arranged to communicate said data over said network databus, at least some of said data arriving from a plurality of devices coupled to said NIC modules through a signal backplane, wherein at least one of said NIC modules acts as a master timing NIC module responsible for allocating a first interval for transmission of periodic data over said databus and for allocating bandwidth on said network databus, said method comprising the steps of:

transmitting all periodic data on said network databus during said first interval;

transmitting requests for said master timing NIC module for transmission of aperiodic data;

processing said requests by assigning bandwidth according to priority and availability of bandwidth on said network databus after transmission of said periodic data;

transmitting a status message to said plurality of NIC modules, said status message indicating what requests are assigned bandwidth on said network databus for transmission of aperiodic data and order of transmission; and

transmitting said aperiodic data over said network databus according to said order of transmission.

REMARKS

Claims 1-24 are pending in the application. Claims 1, 9, 16, and 22 have been amended to address the Examiner's rejection under 35 USC 102. The specification has been

amended to correct a typographical error. No new matter has been added by these amendments. Reconsideration is respectfully requested in view of the foregoing amendments and the following remarks. The foregoing amendments and the following remarks are fully responsive to the Office Action and are believed to render all pending claims at issue patentably distinct over the cited references. The foregoing amendments are made in the interest of expediting prosecution, and there is no intent to surrender any range of equivalents to which Applicant would otherwise be entitled in view of the prior art.

I. CLAIM REJECTION UNDER 35 USC § 102

Claims 1 to 24 were rejected under 35 USC § 102 as anticipated by Diaz et al. With regard to claims 1-8, and16-24, the rejection is believed to be in error for at least the following reason. The Diaz et al. reference fails to disclose allocating a first interval for transmission of periodic data over the databus.

The Examiner states that the Diaz reference discloses a network architecture supporting periodic and aperiodic transmission of data. Diaz discloses, however the transmission of asynchronous and isochronous data. The Diaz disclosure seems to consider isochronous data as a form of periodic data. In the instant application, however, there is a clear distinction made between periodic data and aperiodic data that comprises both asynchronous and isochronous data.

The Diaz reference also provides uniform time slots in which all types of data are transmitted. The instant invention provides for a fixed time interval only for the periodic data, the other time slots being assigned by the master NIC module based on the required bandwidth of each transmission as is determined by an assignment of priorities by the

master timing NIC upon request from the various modules wishing to transmit data. Independent claims 1, 16, and 22 have been amended to more clearly point out this distinction. Accordingly, it is respectfully submitted that claims 1-8, and 16-24 distinguish over the cited Diaz et al. reference.

With respect to claims 9 -15, the Examiner states that the Diaz reference discloses, inter alia, a means for prioritizing an order of transmission of data. Diaz does not disclose, however a prioritization scheme for allocating bandwidth based on a priority system. Claim 9 has been amended to more clearly point out this distinction. Accordingly, it is respectfully submitted that claims 9-15 distinguish over the cited Diaz et al. reference.

II. REFERENCE CITED BUT NOT APPLIED

The Birkedahl et al, Beutler, and Toillon et al references, cited but not applied in the rejection, have been reviewed but are not believed relevant to the invention as claimed.

III. CONCLUSION

In view of Applicant's amendments and remarks, the Examiner's rejections are believed overcome. Accordingly, Applicant submits that the application, as amended, is now in condition for allowance and such allowance is therefore earnestly requested. Should the Examiner have any questions or wish to further discuss this application, Applicant requests that the Examiner contact the undersigned at (480) 385-5060.

If for some reason Applicant has not requested a sufficient extension and/or has not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment of this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

Dated Sept. 6, 2002

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

A limitation of prior art protocols is that some require negotiation between the transmitter and receiver systems to ensure that data arrives at its intended destination point. Such negotiation sessions consume valuable bandwidth on the communications databus and add latency to the overall system. In addition bandwidth can depend on the number of systems accessing the databus so that a particular file may not receive the bandwidth necessary to reach its intended destination. In some circumstances, the system receives no guarantee of any bandwidth no assurances that a file was actually received. This is unacceptable in an avionics environment where data can be critical and receipt by flight crew [personal] personnel must be assured with guaranteed bandwidth assigned to critical data for safe and reliable operation of the aircraft.

IN THE CLAIMS:

1. A network architecture supporting periodic and aperiodic transmission of data comprising:

a network databus;

a plurality of Network Interface Controller (NIC) modules capable of communicating over said network databus, at least one of said plurality of NIC modules acting as a master timing NIC module configured to allocate a first interval for transmission of periodic data over said databus and to assign bandwidth on said network databus for transmission of data, said master timing NIC module including a means of determining what bandwidth is assigned to requests for aperiodic data transmissions based on priority, length and sequence of frames.

9. A network for transmitting data between network interface controllers in a communications system, said network comprising:

a first network interface controller;

a second network interface controller coupled to said first network interface controller, wherein one of said first and second network interface controller comprises a master timing network interface controller;

a plurality of modules coupled to either of said first and second network interface controllers, wherein said modules are capable of requesting transmission of data; and

a means for prioritizing an order of transmission of said data and for allocating bandwidth for each transmission requested based on such prioritization.

16. A network for transmitting data between modules in a communications system, wherein said data comprises periodic data and aperiodic data, said network comprising;

a master network interface controller, wherein said master interface controller is capable of allocating a first interval for transmission of periodic data over said databus and of prioritizing transmission of said aperiodic data requested by said modules;

a first backplane coupled to said master network interface controller, at least one first module coupled to said first backplane, wherein data is transmittable from one of said first modules along said first backplane to other first modules and said master network interface controller;

a network databus coupled to said master network interface controller;

at least one network interface controller coupled to said network databus;

a second backplane coupled to said network interface controller;

at least one second module coupled to said second backplane, wherein data is transmittable from one of said second modules along said second backplane to other second modules and said network interface controller; and

wherein said first and second modules are capable of requesting transmission of said aperiodic data over said network databus, wherein said requests of transmission are prioritizable by said master network interface controller.

22. A method of transmitting both periodic and aperiodic data in a network system comprising a network databus with a plurality of Network Interface Controller (NIC) modules arranged to communicate said data over said network databus, at least some of said data arriving from a plurality of devices coupled to said NIC modules through a signal backplane, wherein at least one of said NIC modules acts as a master timing

NIC module responsible for allocating a first interval for transmission of periodic data over said databus and for allocating bandwidth on said network databus, said method comprising the steps of:

transmitting all periodic data on said network databus during said first interval;

transmitting requests for said master timing NIC module for transmission of aperiodic data;

processing said requests by assigning bandwidth according to priority and availability of bandwidth on said network databus after transmission of said periodic data;

transmitting a status message to said plurality of NIC modules, said status message indicating what requests are assigned bandwidth on said network databus for transmission of aperiodic data and order of transmission; and

transmitting said aperiodic data over said network databus according to said order of transmission.